

ABSTRACT OF THE DISCLOSURE

A wireless communication system and method provide air interface channels using diverse multiframe types on a single frequency carrier. Physical channels for a single frequency carrier are defined as time slots, a series of consecutive time slots define a frame, and a plurality of multiframe types are defined for the single frequency carrier as including different numbers of consecutive frames. By multiplexing a plurality of multiframe types onto a single frequency carrier, diverse channels types such as traffic channels, broadcast control channels, and common control channels can be accommodated on the same frequency carrier to enable efficient utilization of frequency resources. In one exemplary implementation, a first multiframe type is defined as having  $x$  consecutive frames, a second multiframe type is defined as having  $y$  consecutive frames, and a third multiframe type is defined as having  $z$  consecutive frames. Thus, the frame number for the first multiframe type is counted modulus  $x$ , the frame number for the second multiframe type is counted modulus  $y$ , and the frame number for the third multiframe type is counted modulus  $z$ . The first, second, and third multiframe types are further assigned to different time slots. For example, if a frame is defined as having three time slots, the first multiframe type may be assigned to the first time slot, the second multiframe type may be assigned to the second time slot, and the third multiframe type may be assigned to the third time slot.